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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02/25/2002</u>.

2a)☐ This action is FINAL.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-12</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-12</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>25 February 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All   b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date <u>02/25/2002</u>.

4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al.

(US Patent No. 6,116,506) in view of Ginter et al. (US Patent No. 6,253,193 B1).

Referring to claim 1, Matsumoto et al. discloses combining a grey lock mark with an

electronic deposit (purse) of an IC card (see at least abstract, column 1, lines 15-33, column 1,

lines 39-67);

*   setting a grey lock mark on the IC card to lock grey the IC card while simultaneously

recording a first locking card source by the IC card (see at least column 1, lines 39-67, column 6,

lines 1-42).

Matsumoto et al. does not expressly discloses merging a debiting operation and a unlocking

grey operation into a one step operation on the IC card; and resetting the grey lock mark to

unlock grey the IC card automatically after successfully completing the debiting operation.

Ginter et al. discloses merging a debiting operation and a unlocking grey operation into a one

step operation on the IC card (see at least column 235, lines 39-67); and

- resetting the grey lock mark to unlock grey the IC card automatically after successfully

completing the debiting operation (see at least column 235, lines 39-67).

Therefore, at the time the invention was made, it would have been obvious to a person of

ordinary skill in the art to have modified of Matsumoto et al. to include the step(s) taught by

Ginter et al. as discussed above in order to allow objects to remain independent of these values.

Referring to claim 2, Matsumoto et al. further discloses storing an encryption key of

implementing a debiting operation and implementing a mandatory unlocking grey operation in a

computer to make a supplementary debit and implementing a mandatory unlocking grey

operation for a locked grey IC card on an on-line card terminal with on-line mode (see at least

column 2, lines 48-67).

Referring to claim 3, Matsumoto et al. further discloses inserting the IC card to a card

terminal (see at least column 13, lines 41-54, column 14, lines 1-20, column 16, lines 43-67, fig.

4(s11));

- authenticating both the IC card and the card terminal mutually (see at least fig. 4(s16));

locking grey the IC card by the card terminal (see at least abstract, column 2, lines 48-67);

- initiating a consumption (see at least fig. 4(s10)); and

- after the consumption is complete, debiting from an electronic deposit (purse) on the IC

card and unlocking grey the IC card by the card terminal (see at least abstract, fig. 7).

Referring to claim 4, Matsumoto et al. further discloses creating a first authentication code

by the IC card according to the first locking card source and transferring the necessary

parameters for creating the first locking card source to the card terminal simultaneously (see at

least figures 7, 11, column 5, lines 47-67, column 10, lines 29-57, column 11, lines 4-37, column 19, lines 29-57);

- creating a second locking card source by the card terminal using the same mechanism as the IC card, and with the second locking card source creating a second authentication code and sending the second authentication code to the IC card by the card terminal (see at least fig. 16, column 22, lines 1-24);

- determining by the IC card whether the first authentication code and the second authentication code are identical, and if they are, locking grey the IC card and sending back a grey lock characterized code, created with the first locking card source and corresponding data, to the card terminal (see at least figures 21, 24, column 7, lines 1-15, column 8, lines 26-67, column 12, lines 1-22, column 12, lines 54-67, column 21, lines 44-63).

Matsumoto et al. does not expressly disclose creating a third authentication code by the card terminal according to the second locking card source and necessary parameters for debiting, and sending the third authentication code and corresponding parameters together to the IC card.

Ginter et al. discloses creating a fourth authentication code by the IC card with the first locking card source and the corresponding parameters using same mechanism (see at least column 47, lines 24-67);

- determining by the IC card whether the third authentication code and the fourth authentication code are identical, and if they are, debiting from an electronic deposit on the IC card and resetting the grey lock mark simultaneously after debiting successfully (see at least column 47, lines 24-67).

Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have modified of Matsumoto et al. to include the step(s) taught by Ginter et al. as discussed above in order to allow objects to remain independent of these values.

Referring to claim 5, Matsumoto et al. does not expressly disclose storing the third authentication code needed for debiting, the amount of money of an escape card and the grey lock characterized code together as part of a grey record, and sending the grey record to a central computer by the card terminal; for an IC card with an incomplete ending transaction and without debiting and unlocking the last time the IC card was used, authenticating the grey lock characterized code by the card terminal the next time the IC card is used, which terminal has stored said grey record, to confirm that the first locking card source of the IC card is same as the second locking card source for calculating the third authentication code in said grey record; and after confirmation, executing the debit and unlocking grey operation.

Ginter et al. discloses storing the third authentication code needed for debiting, the amount of money of an escape card and the grey lock characterized code together as part of a grey record, and sending the grey record to a central computer by the card terminal (see at least column 47, lines 24-67);

- for an IC card with an incomplete ending transaction and without debiting and unlocking the last time the IC card was used, authenticating the grey lock characterized code by the card terminal the next time the IC card is used, which terminal has stored said grey record, to confirm that the first locking card source of the IC card is same as the second locking card source for calculating the third authentication code in said grey record; and after confirmation, executing the debit and unlocking grey operation (see at least abstract, column 47, lines 24-67).

Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have modified of Matsumoto et al. to include the step(s) taught by Ginter et al. as discussed above in order to allow objects to remain independent of these values.

Referring to claim 6, Matsumoto et al. further discloses wherein said first locking card source is a procedure encryption key (SESPK), correlating to at least a pseudo random number (ICC) created temporarily by the IC card (see at least abstract, figures 7, 11, column 5, lines 47-67, column 10, lines 29-57, column 11, lines 4-37, column 19, lines 29-57).

Referring to claim 7, Matsumoto et al. further discloses wherein said procedure encryption key (SESPK) = 3DES (DPK, DATA), where DPK is a consumption encryption key of the electronic deposit (purse), obtained from a consumption main encryption key (MPK) based on dispersing an application sequence number of the IC card; and DATA is a specific parameter including a temporarily created pseudo random number (ICC) of said IC card, a transaction sequence number of the electronic deposit (purse) (CTC), and the last two bytes of the card terminal transaction sequence number (TTC) (see at least abstract, figure 4(S10)).

Referring to claim 8, Matsumoto et al. further discloses sending a card terminal transaction sequence number (TTC) from the card terminal to the IC card (see at least fig. 10, column 17, lines 37-67);

- getting a pseudo random number (ICC) and an electronic deposit (purse) transaction sequence number (CTC) of the IC card (see at least fig. 10, column 17, lines 37-67);

- creating a first procedure encryption key (SESPK) by the IC card and recording the parameters of this creating step and also creating and recording a grey lock characterized code of this time at the same time (see at least fig. 11);

- sending the pseudo random number (ICC) and the electronic deposit (purse) transaction

sequence number (CTC) from the IC card to the card terminal, which terminal has stored a

consumption main encryption key (MPK) in its security authentication module (PSAM) (see at

least fig. 11, abstract) ;

- deriving the electronic deposit (purse) DPK on the IC card with an application sequence

number of the IC card by the security authentication module (PSAM) (see at least column 17,

lines 37-67); and

- creating a second procedure encryption key (SESPK) by the card terminal using the

pseudo random number (ICC), the electronic deposit (purse) transaction sequence number

(CTC), and the card terminal transaction sequence number (TTC) using the same mechanism as

the IC card (see at least column 17, lines 37-67).

- Matsumoto et al. does not expressly disclose calculating a first authentication code by the

card terminal with the second procedure encryption key (SESPK) ....

Ginter et al. discloses calculating a first authentication code by the card terminal with the

second procedure encryption key (SESPK), and at least the debit amount, operation date and

time, and sending the first authentication code, the second procedure encryption key (SESPK),

and at least the debit amount, operation date and time to the IC card (see at least column 235,

lines 39-67);

- calculating a second authentication code by the IC card with the first procedure

encryption key (SESPK), using the same data and algorithm (see at least column 235, lines 39-

67);

- determining by the IC card whether the first authentication code and the second

authentication code are identical, and if they are, then debiting and unlocking, and if they are not,

then incrementing an internal error counter and returning an error code without debiting and

unlocking (see at least column 235, lines 39-67); and

- locking the IC card application internally to prevent misuse, when the internal error

counter reaches a predetermined number (see at least abstract, column 235, lines 39-67).

Therefore, at the time the invention was made, it would have been obvious to a person of

ordinary skill in the art to have modified of Matsumoto et al. to include the step(s) taught by

Ginter et al. as discussed above in order to allow objects to remain independent of these values.

Referring to claim 9, Matsumoto et al. further discloses wherein the step of combining a grey

lock mark with an electronic deposit comprises creating a refueling electronic deposit (see at

least abstract, column 1, lines 15-33, column 1, lines 39-67).

Referring to claim 10, Matsumoto et al. further discloses wherein said refueling electronic

deposit further includes the functions of refueling transaction, local unlocking grey transaction

and on-line unlocking grey transaction (see at least column 2, lines 48-67).

Referring to claim 11, Matsumoto et al. further discloses wherein said refueling electronic

deposit further includes the states of pre-refueling, grey lock and unlocked grey (see at least

column 2, lines 48-67).

Referring to claim 12, Matsumoto et al. further discloses, wherein said refueling electronic

deposit further includes the commands of INITIALIZE FOR REFUEL, LOCK FOR REFUEL,

DEBIT FOR REFUEL, INITIALIZE FOR UNLOCK, DEBIT FOR UNLOCK and GET GREY

STATUS, wherein the INITIALIZE FOR REFUEL command is used for refueling consumption

transaction initialization, the LOCK FOR REFUEL command is used for making grey lock to

refueling electronic deposit (purse), the DEBIT FOR REFUEL command is used for local

refueling consumption and unlocking grey simultaneously, the INITIALIZE FOR UNLOCK

command is used for on-line unlocking and consumption transaction initialization, the DEBIT

FOR UNLOCK command is used for on-line unlocking grey transaction and supplementary

debiting refueling consumption simultaneously, and the GET GREY STATUS command is used

for reading grey lock state and launching local unlocking grey transaction (see at least abstract,

column 107, lines 31-67, column 168, lines 4-67, column 224, lines 18-67, column 230, lines 12-

34).

3. Examiner's Note: The Examiner has pointed out particular references contained in the prior

art of record within the body of this action for the convenience of the Applicant. Although the

specified citations are representative of the teachings in the art and are applied to the specific

limitations within the individual claim, other passages and figures may apply. Applicant, in

preparing the response, should consider fully the entire reference as potentially teaching all or

part of the claimed invention, as well as the context of the passage as taught by the prior art or

disclosed by the Examiner.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Any inquiry concerning this communication or earlier communications from the patent

examiner should be directed to Shahid Kamal whose telephone number is (571) 270-3272. The

Patent examiner can normally be reached on Monday-Thursday (8:30am -7:00pm), Friday off.
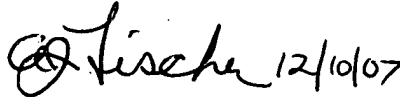
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Andrew J. Fischer can be reached on (571) 272-6779. The fax phone number for this origination

where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent

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call 1(800) 786-9199 (IN USA OR CANADA) or 1(571) 272-1000.

Shahid Kamal   _Fische_ 12/10/07
November 28, 2007   ANDREW J. FISCHER
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                                          TECHNOLOGY CENTER 3600